Title (en)

SEPARATOR-LESS CONDUCTIVE POLYMER SOLID ELECTROLYTE SECONDARY BATTERY

Title (de)

SEPARATORLOSE LEITFÄHIGE POLYMER-FESTELEKTROLYT-SEKUNDÄRBATTERIE

Title (fr)

BATTERIE SECONDAIRE À ÉLECTROLYTE POLYMÈRE SOLIDE CONDUCTEUR SANS SÉPARATEUR

Publication

**EP 3745517 A1 20201202 (EN)**

Application

**EP 18902575 A 20180427**

Priority

- JP 2018022496 A 20180124
- JP 2018018439 W 20180427

Abstract (en)

Solid state solid electrolyte rechargeable battery in no use of separator comprising a positive electrode / a conductive polymer solid state electrolyte layer / a negative electrode in which the solid state electrolyte layer is a composition comprising an inorganic solid electrolyte and a polymer electrolyte composition wherein the polymer electrolyte composition is selected from the group consisting of a polymer electrolyte composition (X<sup>1</sup>) obtained by graft polymerizing or living radical polymerization of a molten salt monomer having a polymerizable functional group and having an onium cation and an anion containing a halogen with a fluoro polymer, and a polymer electrolyte composition comprising (X<sup>1</sup>) and at least one kind selected from the following (X<sup>2</sup>) and (X<sup>3</sup>),X<sup>2</sup> : a molten salt having an onium cation and an anion containing a halogen, or a molten salt monomer having a polymerizable functional group and having an onium cation,X<sup>3</sup> : a polymer or copolymer of a molten salt monomer having a polymerizable functional group and having an onium cation.Ph-75. By providing this rechargeable battery, the solid electrolyte rechargeable battery without separator which has a descending effect of particle interface resistance between a positive and negative active materials in case of using conductive polymer solid electrolyte, a thin film cell, a less dependence on the temperature and excellent safety in case of happening short circuit can be obtained.

IPC 8 full level

**H01M 10/056** (2010.01); **C08F 259/08** (2006.01); **C08L 51/06** (2006.01); **H01M 10/0525** (2010.01)

CPC (source: EP KR US)

**C08F 259/08** (2013.01 - EP); **C08L 51/003** (2013.01 - EP); **H01M 4/131** (2013.01 - EP US); **H01M 4/382** (2013.01 - EP); **H01M 4/505** (2013.01 - EP); **H01M 4/525** (2013.01 - EP); **H01M 4/5825** (2013.01 - EP); **H01M 4/587** (2013.01 - EP); **H01M 4/62** (2013.01 - KR); **H01M 10/052** (2013.01 - EP); **H01M 10/0525** (2013.01 - EP US); **H01M 10/056** (2013.01 - EP KR US); **H01M 10/4235** (2013.01 - KR); H01M 10/052 (2013.01 - KR); H01M 2004/028 (2013.01 - EP US); H01M 2300/0065 (2013.01 - US); H01M 2300/0068 (2013.01 - EP KR); H01M 2300/0082 (2013.01 - EP KR); H01M 2300/0091 (2013.01 - EP KR); Y02E 60/10 (2013.01 - EP); Y02P 70/50 (2015.11 - EP)

C-Set (source: EP)

**C08F 259/08** + **C08F 220/34**

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 3745517 A1 20201202**; **EP 3745517 A4 20210714**; CN 111656594 A 20200911; CN 111656594 B 20240611; JP 7285419 B2 20230602; JP WO2019146137 A1 20210128; KR 102627533 B1 20240119; KR 20200104891 A 20200904; TW 201935747 A 20190901; US 11735763 B2 20230822; US 2020350616 A1 20201105; US 2021135272 A1 20210506; WO 2019146137 A1 20190801

DOCDB simple family (application)

**EP 18902575 A 20180427**; CN 201880087755 A 20180427; JP 2018018439 W 20180427; JP 2019567831 A 20180427; KR 20207021595 A 20180427; TW 108100781 A 20190109; US 201816964315 A 20180427; US 202117140594 A 20210104